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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,541	02/26/2002	Detlef Schmidt	056982/0006	7725

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EXAMINER	
WALLING, MEAGAN S	
ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,541	SCHMIDT ET AL.	
	Examiner	Art Unit	
	Meagan S Walling	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7,8,13,16-35 and 39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *13,16-35 and 39* is/are allowed.

6)☒ Claim(s) *1-5,7 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claim 1 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Boesch et al. (US 5,721,528) in view of Eckelt (US 5,206,643).

Regarding claim 1, Boesch et al. teaches using wheel displacement sensors to detect the occurrence of a flat or low tire inflation (column 2, lines 21-25).

Boesch et al. does not teach counting wheel sensor signal pulses to determine the wheel displacement or distance traveled by the vehicle (current claim 1).

Eckelt teaches counting wheel pulses to determine the distance traveled (column 5, lines 22-27).

It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Boesch et al. with the teachings of Eckelt to use wheel pulses to determine the tire pressure of a vehicle. The motivation for making this combination is to provide a simple way to calculate the distance traveled that would yield accurate results with little chance of error.

2. Claims 3-5, 7, and 8 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Boesch et al. in view of Eckelt and further in view of Okawa et al. (US 5,591,906).

Together Boesch et al. and Eckelt teach all of the limitations of claims 3-5, 7, and 8 except the limitation that the travel distances covered by each of at least four wheels are summed along diagonal groupings relative to the arrangement of the at least four wheels on the vehicle (current claim 3), the step of comparing the sums of travel distances for each diagonal grouping of the at least four wheels and recognizing an insufficient tire pressure when the sums differ from one another by more than a preselected limit value (current claim 4), that the step of determining the travel distances covered by each of at least four wheels is carried out in a plurality of monitoring cycles and further comprising the step of recognizing an insufficient tire pressure condition when deviations of the sums of the travel distances for diagonal groupings of the at least four wheels exceed a preselected limit value for the monitoring cycles (current claim 5), half waves of the pulsed signals are counted in the step of determining the travel distances covered by each of at least four wheels (current claim 7), ascertaining whether the sums for each diagonal grouping of the at least four wheels have one of a positive and negative and zero values, and determining the location of a wheel exhibiting an insufficient tire pressure based on whether the sums are one of positive and negative and zero (current claim 8).

Regarding claim 3, Okawa et al. teaches comparing the rotational angular velocities of a pair of tires on a diagonal line to the rotational angular velocities of another pair of tires on a diagonal line (column 4, lines 17-20).

Regarding claim 4, Okawa et al. teaches the step of comparing the sums of travel distances for each diagonal grouping of the at least four wheels and recognizing an insufficient tire pressure when the sums differ from one another by more than a preselected limit value (column 4, lines 23-26).

Regarding claim 5, Okawa et al. teaches that the step of determining the travel distances covered by each of at least four wheels is carried out in a plurality of monitoring cycles (column 4, lines 36-67 describe a plurality of cycles), and further comprising the step of recognizing an insufficient tire pressure condition when deviations of the sums of the travel distances for diagonal groupings of the at least four wheels exceed a preselected limit value for the monitoring cycles (column 4, lines 23-26).

Regarding claim 7, Okawa et al. teaches that half waves of the pulsed signals are counted in the step of determining the travel distances covered by each of the at least four wheels (column 5, lines 2-9).

Regarding claim 8, Okawa et al. teaches ascertaining whether the sums for each diagonal grouping of the at least four wheels have one of a positive and negative and zero values, and determining the location of a wheel exhibiting an insufficient tire pressure based on whether he sums are one of positive and negative and zero (column 11, lines 50-59). Okawa's definition of dF = 1 is equivalent to the difference equaling zero.

It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Boesch et al. and Eckelt with the teachings of Okawa et al. to diagonally sum distances traveled. It would be obvious to measure the diagonals because the influencing of cornering is cancelled by measuring the inner and outer wheels together.

Allowable Subject Matter

Claims 13, 16-35, and 39 are allowed.

The following is an examiner's statement of reasons for allowance: Please see previous office action for reasons for allowance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments filed 02/06/2004 have been fully considered but they are not persuasive.

Applicant argues that neither Boesch et al. nor Eckelt teach the claimed invention. While this is true, the combination of the two patents teaches the claimed invention. Boesch et al. teaches using wheel displacement sensors to detect the occurrence of a flat or low tire inflation and Eckelt teaches counting wheel pulses to determine the distance traveled. While Boesch et al. "introduces undesirable inaccuracies that are avoided by the present invention," the combination of Boesch et al. and Eckelt teaches that counting wheel pulses can easily determine the distance traveled and this distance traveled can be used to detect the occurrence of flat or low tire inflation. If the method of determining the distance traveled by counting wheel pulses as taught by Eckert is combined with the method of using wheel displacement to detect low or flat tires as taught by Boesch et al., undesirable inaccuracies are avoided and the claimed invention is taught.

Applicant further argues that the Okawa patent does not teach determining travel distances covered by the wheels merely by counting wheel sensor signal pulses. It was not

intended to imply that combining Okawa with Boesch et al. and Eckelt would teach this; rather Okawa was combined to teach the aspects of claims 3-5, 7, and 8. As explained above, the combination of Boesch et al. and Eckelt teaches claim 1.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meagan S Walling whose telephone number is (571) 272-2283. The examiner can normally be reached on Monday through Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

msw

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